

## **REMARKS**

### ***Summary of Amendments***

1. Claims 1 through 4 were originally presented in this application. Claim 1 has been amended, as described in more detail below, to more particularly point out and distinctly claim the subject matter of the invention. Claims 1 through 5 remain pending.

### ***Claim Rejections – 35 U.S.C. §112***

2. Claims 1-5 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, with respect to independent claim 1, the Examiner states, "[T]he newly added limitation in claim 1 of 'the electrodes having a length of at least half the diameter of the wafer carrying surface' is a new matter." And with respect to dependent claim 5, the Examiner states, "[The] recitation of 'heat capacity of each of the plurality of electrodes is 1% or less . . . ' is also a new matter."
3. Applicants have amended claim 1 to remove the limitation "the electrodes having a length of at least half the diameter of the wafer carrying surface." Applicants therefore believe that the § 112 rejection of claim 1 is overcome.
4. Applicants respectfully traverse the Examiner's § 112 rejection of claim 5. As described in Applicants' RCE-accompanying amendment, dated September 20, 2006, Tables I and II both clearly support the language of previously presented claim 5. In particular, Table I discloses heat capacity percentages of 1.8%, 3.7%, 5.6%, 7.5%, and 9.3% for devices having 2, 4, 6, 8, and 10 electrodes, respectively. Table II discloses heat capacity percentages of 1.5%, 3.1%, 4.7%, 6.3%, and 7.8% for devices having 2, 4, 6, 8, and 10 electrodes, respectively. Thus, Tables I and II both clearly support the recitation, "the heat capacity of each of the plurality of electrodes is 1% or less . . ." as presented in claim 5, added by Applicants' September 20, 2006 amendment.
5. MPEP § 2163 II.A.3.(b) states,

The examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims.

And at the beginning of § 2163 II.A., the MPEP quotes § 2163.04, which reads

The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of *presenting by a preponderance of evidence* why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.

(Emphasis added.) Applicants note that the Examiner has presented no such evidence or reasoning in making the § 112 rejection of claim 5. Moreover, MPEP § 2163 II.A.3.(b) goes on to state, "To comply with the written description requirement . . . each claim limitation must be expressly, implicitly, or inherently supported in the originally filed disclosure." Applicants submit that the claim 5 limitation is implicit in Tables I and II as described above. Applicants respectfully submit, therefore, that the § 112 rejection of claim 5 is not valid.

### ***Claim Rejections – 35 U.S.C. § 103***

6. Claims 1 through 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Araki et al.* (U.S. Pat. No. 6,239,402) in view of *Ohashi et al.* (U.S. Pat. No. 6,261,708) as evidenced by *Soma et al.* (U.S. Pat. No. 5,231,690) and also further in view of Yasutaka Ito (JP 2002-249377). In particular, the Examiner states,

*Araki et al.* disclose an aluminum-nitride based wafer holder for [a] semiconductor manufacturing device (Fig. 8) with a shaft (28) or wafer holder (Fig. 9) with a shaft (34) and an electrical circuit formed inside (7 for resistive heating and 9 for plasma), and electrodes for supplying power (12, 13 and 14). The heat capacity of the electrodes could be fairly estimated to be less than 2 J/gK . . . .

. . . .  
The heat capacity of the wafer holder however could be fairly estimated to be more than 350 J/gK for [the] wafer holder of Fig. 9, and much larger for the wafer holder of Fig 8. Therefore, the heat capacity of the electrodes of the disclosed wafer holder would be much less than 10%.

. . . .  
*Ohashi et al.* teach a method of joining a shaft and a wafer holder, and teach that respective surfaces are smoothed to less than 2  $\mu\text{m}$ .

7. Applicants respectfully traverse this rejection to the extent that it is pertinent to amended claim 1. Claim 1 has been amended to recite: "a shaft joined to the wafer holder for supporting the wafer holder, the shaft having an outer diameter that is less than an outer diameter of the wafer holder." This amendment to claim 1 is supported in the original specification such that no new matter has been added. For example, Embodiment 1 discloses a shaft having an outer diameter

of 80 mm and a wafer holder having a wafer-carrying surface diameter of 340 mm.

8. Applicants respectfully submit that claim 1, as amended, now distinguishes patentably over *Araki et al.* in view of *Ohashi et al.* as evidenced by *Soma et al.* and further in view of *Yasutaka Ito*. In particular, claim 1 now distinguishes over Fig. 9 of *Soma et al.* Accordingly, Applicants submit that the combination of references does not meet the requirements set forth in MPEP § 2143, in that the combination fails to teach each of the elements of amended claim 1. Applicants therefore believe that the rejection of independent claim 1 under the presently addressed section of the Office action is overcome.
9. Moreover, Applicants respectfully maintain that previously presented claim 5 is allowable over the prior art of record. As stated above, claim 5 recites a heat capacity ratio of 1% or less for each of the electrodes. There is no evidence in *Araki et al.* (or *Soma et al.*) that the heat capacity of each electrode is 1% or less of the heat capacity of the region of the wafer holder inside the outer periphery of the shaft. Applicants therefore further believe that the rejection of dependent claim 5 is overcome.
10. Applicants respectfully submit that independent claim 1, as amended, is allowable over the prior art of record. Claim 1 being allowable, it follows that dependent claims 2-5 must also be allowable.

Accordingly, Applicants courteously urge that this application is now in condition for allowance. Reconsideration and withdrawal of the rejections is requested. Favorable action by the Examiner at an early date is solicited.

Respectfully submitted,

May 14, 2007

/James Judge/

James W. Judge  
Registration No. 42,701

**JUDGE & MURAKAMI IP ASSOCIATES**  
Dojima Building, 7<sup>th</sup> Floor  
6-8 Nishitemma 2-Chome, Kita-ku  
Osaka-shi 530-0047  
JAPAN

Telephone: **305-938-7119**  
Voicemail/Fax: **703-997-4565**